Modified PTO/SB/33 (10-05)

PRE-APPEAL BRIEF REQUEST FOR REVIEW	Docket Number: Q63075	
Mail Stop AF Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	Application Number: 09/763,194	Filed: February 20, 2001
	First Named Inventor: Kazunobu FUJIKAWA	
	Art Unit: 3742	Examiner: Maria Alexandra ELVE

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Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal

The review is requested for the reasons(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

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December 1, 2009
Date

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Kazunobu FUJIKAWA, et al.

Docket No: Q63075

Appln. No.: 09/763,194

Group Art Unit: 3742

Confirmation No.: 3832

Examiner: Maria Alexandra ELVE

Filed: February 20, 2001

For: METHOD AND APPARATUS FOR SURFACE DISCHARGE PROCESSING , AND AN ELECTRODE FOR SURFACE DISCHARGE PROCESSING

PRE-APPEAL BRIEF REQUEST FOR REVIEW

MAIL STOP AF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to the Pre-Appeal Brief Conference Pilot Program, and further to the Examiner's Final Office Action dated September 1, 2009, Applicant files this Pre-Appeal Brief Request for Review. This Request is also accompanied by the filing of a Notice of Appeal.

Applicant turns now to the rejections at issue:

Claims 6 and 8-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Inoue (USPN 4,448,655, hereinafter "Inoue '655") in view of either Rocklin (USPN 4,551,603, hereinafter "Rocklin") or Inoue (USPN 4,346,281 hereinafter "Inoue '281"). Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Inoue '655 in view of Rocklin or Inoue '281, as stated above, and in further view of Bonga (USPN 4,645,894, hereinafter "Bonga"). Applicant respectfully submits that the claims should be allowable over the cited references.

As set forth, in the Response filed May 4, 2009, Applicant submits that 6-10 should be allowable because the cited references, alone or in combination, do not teach or suggest all of the features of the claims and one of ordinary skill in the art would not have been motivated to combine and modify the cited references to produce the claimed invention. In particular,

independent claims 6 and 10 would not have been rendered obvious in view of the Examiner's proposed combination of Inoue '655 and Rocklin or Inoue '281 because the Examiner proposed modification of Inoue '655 would impermissibly change the principle of operation of the Inoue '655 electrode. That is, modifying Inoue '655 by adhering a surface discharge processing material in recesses of the rugged peripheral surface of the wire electrode of Inoue '655 would fill in (flatten) the recesses such that the peripheral surface is no longer rugged (i.e., the surface would tend to become smooth).

Inoue '655 discloses a wire electrode which is formed with a rugged peripheral surface along a length thereof. As correctly conceded by the Examiner, Inoue '655 fails to teach or suggest that a surface discharge processing material is adhered to the rugged peripheral surface (i.e., projections and recesses) of the wire. Inoue '655 teaches various ways of producing the rugged peripheral surface, e.g., by electroless plating, chemical plating, electroplating, spark deposition, powder spraying, plasma-spraying, sintering, sandblasting or knurling; twisting together a group of small diameter wires; winding a small diameter wire on a large diameter core wire; and forming a spiral groove in the smooth surface of a wire by means of a rotating die. Inoue teaches that the wire electrode is formed with a rugged peripheral surface to facilitate the detachment of gaseous bubbles from the machining surface of the wire electrode. The gaseous bubbles are formed by the electrical decomposition of the machining liquid tend to be adherent on the machining surface of the electrode and thus negatively act as a thermal insulator/barrier between the electrode and the coolant machining liquid. Further, the recesses provide additional surface area in which a liquid coolant may flow to more efficiently cool the electrode. Inoue '655 teaches that by removing the thermal barrier produced by gaseous bubbles which continually develop on the electrode surface, the thermal emission and cooling of the electrode surface is enhanced such that the elongated element is capable of carrying greater machining current without undergoing thermal destruction by the heat which develops by the passage of the greater current. The eventual result is a marked increase in removal rate and hence marked shortening of the total machining time required to accomplish a given machining operation (Inoue at Abstract and page 7, lines 11-30).

Thus, Inoue '655 in fact teaches away from adhering a surface discharge processing material in recesses of the rugged peripheral surface of the wire electrode of Inoue '655, as this modification would fill in or flatten the recesses such that the peripheral surface would be smooth and no longer facilitate the flow of liquid coolant nor the detachment of gaseous bubbles, and therefore render the invention inoperable (MPEP 2143.01).

Further, Applicant respectfully submits that it is quite clear that neither Rocklin nor Inoue '281 provide any teaching or suggestion which would motivate one of skill in the art to modify Inoue '655 by adhering a surface discharge processing material in recesses of the rugged peripheral surface of the wire electrode.

The Examiner cites Rocklin for disclosing an "electrode may be constructed from an intermettallic phase dispersed in a matrix of eutectic or solid solution" and asserts that "[i]t would have been obvious to ... use a ductile wire (ductile electrode) constructed of a combination of materials to deposit (reform) the worksurface, as taught by Rocklin in the Inoue ('655) apparatus because it is merely a variation of the electrode." The Examiner cites Inoue '281 for disclosing an "electrode may be made of WC-Co and copper" and that "[t]his electrode forms metallic alloy deposition on the worksurface." The Examiner further asserts that "[i]t would have been obvious to ... use a composite electrode as taught by Inoue ('281) in the Inoue ('655) apparatus because it is merely a variation of the electrode." However, Applicant respectfully submits that the mere disclosures of Rocklin and Inoue '281 that teach that an electrode may be formed of a composite material does not in any way provide a suggestion or motivation to modify Inoue '655 by adhering a surface discharge processing material in recesses of the rugged peripheral surface of the wire electrode, even if the Inoue '655 disclosure which teaches away from such modification is impermissibly ignored.

Further still, while Inoue '655 is broadly relevant to both Rocklin and Inoue '281, in that they all use an electrical discharge to modify a workpiece, Inoue '655 does not employ an electrical discharge to apply a material layer on a workpiece as is taught by Rocklin and Inoue '281. Instead, Inoue '655 employs an electrical discharge to erode a material layer of the workpiece (Column 1 Lines 13-16). Thus, modifying the teachings of Inoue '655 to deposit a

material on the surface of a workpiece would again render the invention of Inoue '655 inoperable (MPEP 2143.01).

Lastly, the Examiner has not provided an objective reason why one of ordinary skill in the art would have been motivated to further modify Inoue '655 based on Rocklin or Inoue '281 to produce the claimed invention, i.e., the Examiner's alleged rationale (i.e., "because it is merely a variation of the electrode") is insufficient to establish a *prima facie* case of obvious under 35 U.S.C. § 103.

Applicant notes that other than the brief response on page 7 of the Office Action dated September 1, 2009, the rejections and the Examiner's reasons in support of the rejections are identical to those in the previous Office Action dated February 2, 2009. In response on page 7 to the arguments for patentability submitted in the May 4, 2009 Response, the Examiner simply states:

> Applicant argues the rejection of claim 6 and 10 and references Bonga and Scarpelli. The examiner respectfully notes that Scarpelli has not been use[d] and Bonga is directed to claim 10 alone.

However, it appears that the Examiner misunderstands Applicant's arguments since the arguments for patentability addressed in detail the deficiencies of Inoue '655, Rocklin and Inoue '281 on pages 3-6 of the May 4, 2009 Response and merely briefly mention Scarpelli and Bonga on page 3. That is, the first paragraph of page 3 of the May 4, 2009 Response merely state that the Examiner has posed a new grounds of rejection by replacing Bonga and Scarpelli with Rocklin and Inoue '281 and that these new grounds of rejection are equally insufficient as the previous grounds of rejection for the reasons that follow.

The Examiner further responds to the arguments for patentability by stating:

> Applicant argues that the prior art does not teach a recess and deposition on the workpiece. The examiner respectfully notes that the recess claim limitation is in combination with deposition on the wire.

However, Applicant respectfully submits that the Examiner's response here is not understood since it was submitted that (1) Inoue '655 teaches away from the Examiner's proposed modification, (2) modifying Inoue '655 as proposed by the Examiner would

impermissibly change the principle of operation of the Inoue '655 electrode and render it inoperable for its intended purpose, and (3) Rocklin and Inoue' 281 do not provide any teachings would motivate one skilled in the art to produce the claimed inventions.

In view of the above, Applicant respectfully submits that independent claim 6, as well as dependent claims 8-10, are patentable because the cited references, alone or in combination, do not teach or suggest all of the features of the claims and one of ordinary skill in the art would not have been motivated to combine and modify the cited references to produce the claimed invention.

Respectfully submitted,

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